

IN THE CLAIMS:

The following listing of claims will replace all prior listings of claims in the application.

1. (Canceled):

2. (Canceled):

3. (Currently Amended): A method for assembling a plurality of packet fragments into a packet handling a burst of packets sent to network interface circuitry, the method comprising:

receiving a first packet fragment associated with a first packet;
determining that the first packet fragment has a valid checksum;
storing the first packet fragment in a reserved buffer space in memory
corresponding to the first packet;
starting a timer to measure a time period;
sorting the packet fragments in the reserved buffer space based on a fragment
number associated with each packet fragment; and
determining, at a predetermined time interval, whether any packet fragment
associated with the first packet is missing,
buffering the packets in memory accessible by the network-interface circuitry;
incrementing a counter of the network-interface circuitry for each of the packets
buffered;
checking for a connection table entry for the packets buffered;
responsive to non-existence of the connection table entry, sending the packets to
network-interface software for preparing the packets for the network-interface circuitry,
the network-interface software for:
generating an address-resolution-table (ART) index for an address
resolution table entry that stores a media-access-control (MAC) address and MAC layer
attributes;
building the connection table entry, including the ART index;

at least partially processing the packets;
sending the packets as processed to the network interface circuitry;
forwarding the packets from the network interface circuitry;
correspondingly clearing the buffer of the packets responsive to the packets forwarded; and
correspondingly decrementing the counter for each of the packets cleared from the buffer.

4. (Currently Amended): The method, according to claim 3, wherein at least one packet fragment is missing at the end of the time period, and further comprising the step of clearing the reserved buffer space corresponding to the first packet the packets are buffered in local memory of the network interface circuitry.

5. (Currently Amended): The method, according to claim 3 [[4]], wherein the packets are User Datagram Protocol formatted packets no packet fragments are missing at the end of the time period, and further comprising the steps of:

combining each of the packet fragments in the reserved buffer space to generate the first packet;

buffering the first packet in memory accessible by the network interface circuitry;
incrementing a counter of the network interface circuitry;
checking for a connection table entry for the first packet;
responsive to non-existence of the connection table entry, sending the first packet to network interface software for preparing the first packet for the network interface circuitry, the network interface software configured to:

generate an address resolution table (ART) index for an address resolution table entry that stores a media access control (MAC) address and MAC layer attributes.

build the connection table entry, including the ART index,
at least partially process the first packet, and
send the first packet as processed to the network interface circuitry;
forwarding the first packet from the network interface circuitry;

clearing the buffer of the first packet responsive to forwarding the first packet;
and
decrementing the counter.

6. (Currently Amended): The method, according to claim 5 [[4]], wherein the first packet is a packets-are Voice Over Internet Protocol formatted packet or a User Datagram Protocol formatted packet packets.

7. (Currently Amended): The method, according to claim 5 [[3]], further comprising the step of generating a total count signal from the buffer, wherein the total count signal indicates to the network interface circuitry whether all the packets sent to the network interface software for processing have been at least partially processed.

8. (Currently Amended): The method, according to claim 5 [[3]], further comprising the step of setting a do not use flag for the connection table entry, wherein the packets subsequent to an initial received packet for a connection and to creation of the connection table entry are sent to the network interface software for processing responsive to the do not use flag being set.

9. (Currently Amended): The method, according to claim 5 [[3]], wherein the first packet is packets-are completely processed by the network interface software.

10. (Currently Amended): The method, according to claim 5 [[3]], further comprising the step of completing the processing of the first packet packets with the network interface circuitry.

11. (Currently Amended): A computer readable medium storing instructions for causing a network interface to assemble a plurality of packet fragments into a packet, by performing the steps of: An apparatus for handling a burst of packets sent to network interface circuitry, comprising:

receiving a first packet fragment associated with a first packet;

determining that the first packet fragment has a valid checksum;
storing the first packet fragment in a reserved buffer space in memory
corresponding to the first packet;
starting a timer to measure a time period;
sorting the packet fragments in the reserved buffer space based on a fragment
number associated with each packet fragment; and
determining, at a predetermined time interval, whether any packet fragment
associated with the first packet is missing.

means for buffering the packets in memory accessible by the network interface circuitry;

means for incrementing a counter of the network interface circuitry for each of the packets buffered;

means for checking for a connection table entry for the packets buffered;

means for sending the packets to network interface software for preparation for the network interface circuitry responsive to one of non-existence of the connection table entry and a do not use flag, the network interface software including:

means for generating an address resolution table (ART) index for an address resolution table entry that stores a media access control (MAC) address and MAC layer attributes;

means for building the connection table entry, including the ART index;

means for at least partially processing the packets in sequence; and

means for sending the packets as processed to the network interface circuitry;

means for forwarding the packets as at least partially processed from the network interface circuitry;

means for clearing the buffer of the packets respectively responsive to the packets forwarded; and

means for decrementing the counter respectively for each of the packets cleared from the buffer.

12. (Currently Amended): The computer readable medium apparatus, according to claim 11, wherein at least one packet fragment is missing at the end of the time period, and further comprising the step of clearing the reserved buffer space corresponding to the first packet the memory is local memory of the network interface circuitry.

13. (Currently Amended): The computer readable medium apparatus, according to claim 11, wherein no packet fragments are missing at the end of the time period, and further comprising the steps of: the counter is coupled to the memory,

combining each of the packet fragments in the reserved buffer space to generate the first packet;

buffering the first packet in memory accessible by the network interface circuitry;

incrementing a counter of the network interface circuitry;

checking for a connection table entry for the first packet;

responsive to non-existence of the connection table entry, sending the first packet to network interface software for preparing the first packet for the network interface circuitry, the network interface software configured to:

generate an address resolution table (ART) index for an address resolution table entry that stores a media access control (MAC) address and MAC layer attributes.

build the connection table entry, including the ART index,

at least partially process the first packet, and

send the first packet as processed to the network interface circuitry;

forwarding the first packet from the network interface circuitry;

clearing the buffer of the first packet responsive to forwarding the first packet;

and

decrementing the counter.

14. (Currently Amended): The computer readable medium apparatus, according to claim 13 [[11]], further comprising the step of means for generating a total count signal from the buffer, wherein the total count signal indicates to the network interface circuitry

whether all the packets sent to the network interface software for processing have been at least partially processed have cycled out.

15. (Currently Amended): The computer readable medium, according to claim 13, wherein the first packet is a Voice Over Internet Protocol formatted packet or a User Datagram Protocol formatted packet. A computer readable medium storing instructions for causing a network interface to handle a burst of packets by performing the steps of: buffering packets received in memory-accessible by network interface circuitry; incrementing a counter of the network interface circuitry for each of the packets buffered; checking for a connection table entry for the packets buffered; responsive to non-existence of the connection table entry, sending the packets to network interface software for preparing the packets for the network interface circuitry, the network interface software for: generating an address resolution table (ART) index for an address resolution table entry that stores a media access control (MAC) address and MAC layer attributes; building the connection table entry, including the ART index; at least partially processing the packets; and sending the packets as at least partially processed to the network interface circuitry; forwarding the packets as at least partially processed from the network interface circuitry; correspondingly clearing the buffer of the packets responsive to the packets forwarded; and correspondingly decrementing the counter for each of the packets cleared from the buffer.

16. (Currently Amended): The computer readable medium, according to claim 13 [[15]], further comprising the step of setting a do not use flag for the connection table entry,

wherein the packets obtained after creation of the connection table entry are sent to the network interface software responsive to the do not use flag being set.

17. (Currently Amended): The computer readable medium, according to claim 13 [[15]], wherein the first packet is packets are completely processed by the network interface software.

18. – 22. (Canceled):

23. (New): A system for assembling a plurality of packet fragments into a packet, the system comprising:

- a central processing unit;
- a system memory coupled to the central processing unit; and
- a network interface coupled to the system memory and the central processing unit, the network interface configured to:
 - receive a first packet fragment associated with a first packet,
 - determine that the first packet fragment has a valid checksum,
 - store the first packet fragment in a reserved buffer space in a network interface local memory corresponding to the first packet,
 - start a timer to measure a time period,
 - sort the packet fragments in the reserved buffer space based on a fragment number associated with each packet fragment, and
 - determine, at a predetermined time interval, whether any packet fragment associated with the first packet is missing.

24. (New): The system, according to claim 23, wherein at least one packet fragment is missing at the end of the time period, and the network interface further configured to clear the reserved buffer space corresponding to the first packet.

25. (New): The system, according to claim 23, wherein no packet fragments are missing at the end of the time period, and the network interface further configured to:

combine each of the packet fragments in the reserved buffer space to generate the first packet;

buffer the first packet in the system memory accessible by network interface circuitry;

increment a counter of the network interface circuitry;

check for a connection table entry for the first packet;

responsive to non-existence of the connection table entry, send the first packet to network interface software for preparing the first packet for the network interface circuitry, the network interface software configured to:

generate an address resolution table (ART) index for an address resolution table entry that stores a media access control (MAC) address and MAC layer attributes,

build the connection table entry, including the ART index,

at least partially process the first packet, and

send the first packet as processed to the network interface circuitry;

forward the first packet from the network interface circuitry;

clear the buffer of the first packet responsive to forwarding the first packet; and
decrement the counter.

26. (New): The system, according to claim 25, wherein the first packet is a Voice Over Internet Protocol formatted packet or a User Datagram Protocol formatted packet.

27. (New): The system, according to claim 25, wherein the network interface is further configured to generate a total count signal from the buffer, wherein the total count signal indicates to the network interface circuitry whether all the packets sent to the network interface software for processing have been at least partially processed.